IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:
Ryals *et al.*
Serial Number: TBA
Filed: on even date herewith
For: Method For Protecting Plants

Art Unit: TBA
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Atty Docket: PB/5-21215C

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to the examination of the above-referenced application, applicants respectfully request entry of the following amendments.

IN THE CLAIMS

Please cancel claims 2-7, 9, 11-41, 43-57, 60-61, and 63-67 without prejudice or disclaimer.

Please re-write claims 1, 8, 10, 42, 58-59, and 62 as follows:

1. (Amended) A method for protecting a plant from pathogen attack, comprising the steps of:

(a) providing a plant transformed with a chimeric gene comprising a promoter active in plants operatively linked to a nucleotide sequence encoding a protein involved in the signal transduction cascade leading to systemic acquired resistance in plants, wherein the complement of said nucleotide sequence hybridizes under the following conditions to the coding sequence set forth in SEQ ID NO:6: hybridization in 1% BSA; 520mM $NaPO_4$, pH7.2; 7% lauryl sulfate, sodium salt;

1mM EDTA; 250 mM sodium chloride at 55°C for 18-24h, and wash in 6XSSC for 15 min. (X3) 3XSSC for 15 min. (X1) at 55°C, wherein said plant exhibits a first level of disease resistance; and

(b) applying to the plant provided in step (a) a microbicide that confers a second level of disease resistance;

(c) whereby application of said microbicide to said plant confers a synergistically enhanced third level of disease resistance that is greater than the sum of the first and second levels of disease resistance.

8. (Amended) A method according to claim 1, wherein said protein comprises the amino acid sequence set forth in SEQ ID NO:2.

10. (Amended) A method according to claim 1, wherein said nucleotide sequence comprises the coding sequence set forth in SEQ ID NO:6.

42. (Amended) A method according to claim 1, wherein said microbicide is a fungicide selected from the following group:

4-[3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)acryloyl]morpholine ("dimethomorph");

5-methyl-1,2,4-triazolo[3,4-b][1,3]benzothiazole ("tricyclazole");

3-allyloxy-1,2-benzothiazole-1,1-dioxide ("probonazole");

μ-[2-(4-chlorophenyl)ethyl]--μ-(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol,("tebuconazol");

1-[[3-(2-chlorophenyl)-2--(4-fluorophenyl)oxiran-2-yl]methyl]-1H-1,2,4-triazole, ("epoxyconazol");

μ-(4-chlorophenyl)--μ-(1-cyclopropylethyl)--1H-1,2,4-triazole--1-ethanol, ("cyproconazol");

5-(4-chlorobenzyl)--2,2-dimethyl-1--(1H-1,2,4-triazol-1--ylmethyl)-cyclopentanol, ("metconazol");

2-(2,4-dichlorophenyl)--3-(1H-1,2,4-triazol-1-yl)-propyl--1,1,2,2-tetrafluoroethyl-ether, ("tetraconazol");

methyl-(E)-2-{2-[6-(2-cyanophenoxy)pyrimidin--4-yloxy]phenyl}--3-methoxyacrylate, ("ICI A 5504", "azoxystrobin");

methyl-(E)--2-methoximino--2-[μ-(o-tolyloxy)--o-tolyl]acetate, ("BAS 490 F", "cresoxime methyl");

2-(2-phenoxyphenyl)-(E)-2-methoximino--N-methylacetamide);

[2-(2,5-dimethylphenoxymethyl)-phenyl]-(E)--2-methoximino-N-methylacetamide);

(1R,3S/1S,3R)-2,2-dichloro--N-[(R)-1-(4-chlorophenyl)ethyl]--1-ethyl-3-methylcyclopropanecarboxamide, ("KTU 3616");

manganese ethylenebis(dithiocarbamate)polymer-zinc complex, ("mancozeb");

1-[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan--2-ylmethyl]--1H-1,2,4--triazole, ("propiconazole");

1-{2-[2-chloro-4-(4-chlorophenoxy)phenyl]-4-methyl--1,3-dioxolan--2-ylmethy l)--1H-1,2,4--triazole, ("difenoconazole");

1-[2-(2,4-dichlorophenyl)pentyl--1H-1,2,4-triazole, ("penconazole");

cis-4-[3-(4-tert-butylphenyl)--2-methylpropyl]--2,6-dimethylmorpholine, ("fenpropimorph");

1-[3-(4-tert-butylphenyl)--2-methylpropyl]-piperidine, ("fenpropidin");

4-cyclopropyl-6-methyl-N-phenyl-2-pyrimidinamine ("cyprodinil");

(RS)-N-(2,6-dimethylphenyl--N-(methoxyacetyl)-alanine methyl ester ("metalaxyl", "ridomil");

(R)-N-(2,6-dimethylphenyl--N-(methoxyacetyl)-alanine methyl ester ("R-metalaxyl");

1,2,5,6-tetrahydro--4H-pyrrolo[3,2,1-ij]quinolin-4-one ("pyroquilon"); and

ethyl hydrogen phosphonate ("fosetyl").

58. (Amended) A method according to claim 1, wherein said microbicide is either a benzothiadiazole compound, an isonicotinic acid compound, or a salicylic acid compound.

59. A method according to claim 58, wherein said microbicide is a benzothiadiazole compound.

62. (Amended) A method according to claim 59, wherein said benzothiadiazole compound is benzo(1,2,3)thiadiazole-7-carbothioic acid *S*-methyl ester.

Please add new claims 68-93 as follows:

68. (New) A method according to claim 1, wherein said microbicide is 4-[3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)acryloyl]morpholine ("dimethomorph").

69. (New) A method according to claim 1, wherein said microbicide is 5-methyl-1,2,4-triazolo[3,4-b][1,3]benzothiazole ("tricyclazole").

70. (New) A method according to claim 1, wherein said microbicide is 3-allyloxy-1,2-benzothiazole-1,1-dioxide ("probonazole").

71. (New) A method according to claim 1, wherein said microbicide is μ-[2-(4-chlorophenyl)ethyl]--μ-(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol ("tebuconazol").

72. (New) A method according to claim 1, wherein said microbicide is 1-[[3-(2-chlorophenyl)-2--(4-fluorophenyl)oxiran-2-yl]methyl]-1H-1,2,4-triazole ("epoxyconazol").

73. (New) A method according to claim 1, wherein said microbicide is μ-(4-chlorophenyl)--μ-(1-cyclopropylethyl)--1H-1,2,4-triazole--1-ethanol ("cyproconazol").

74. (New) A method according to claim 1, wherein said microbicide is 5-(4-chlorobenzyl)--2,2-dimethyl-1--(1H-1,2,4-triazol-1--ylmethyl)-cyclopentanol ("metconazol").

75. (New) A method according to claim 1, wherein said microbicide is 2-(2,4-dichlorophenyl)--3-(1H-1,2,4-triazol-1-yl)-propyl--1,1,2,2-tetrafluoroethyl-ether ("tetraconazol").

76. (New) A method according to claim 1, wherein said microbicide is methyl-(E)-2-{2-[6-(2-cyanophenoxy)pyrimidin--4-yloxy]phenyl}--3-methoxyacrylate ("ICI A 5504", "azoxystrobin").

77. (New) A method according to claim 1, wherein said microbicide is methyl-(E)--2-methoximino--2-[μ-(o-tolyloxy)--o-tolyl]acetate ("BAS 490 F", "cresoxime methyl").

78. (New) A method according to claim 1, wherein said microbicide is 2-(2-phenoxyphenyl)-(E)-2-methoximino--N-methylacetamide.

79. (New) A method according to claim 1, wherein said microbicide is [2-(2,5-dimethylphenoxymethyl)-phenyl]-(E)--2-methoximino-N-methylacetamide.

80. (New) A method according to claim 1, wherein said microbicide is (1R,3S/1S,3R)-2,2-dichloro--N-[(R)-1-(4-chlorophenyl)ethyl]--1-ethyl-3-methylcyclopropanecarboxamide ("KTU 3616").

81. (New) A method according to claim 1, wherein said microbicide is manganese ethylenebis(dithiocarbamate)polymer-zinc complex ("mancozeb").

82. (New) A method according to claim 1, wherein said microbicide is 1-[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan--2-ylmethyl]--1H-1,2,4--triazole ("propiconazole").

83. (New) A method according to claim 1, wherein said microbicide is 1-{2-[2-chloro-4-(4-chlorophenoxy)phenyl]-4-methyl--1,3-dioxolan--2-ylmethy l)--1H-1,2,4--triazole ("difenoconazole").

84. (New) A method according to claim 1, wherein said microbicide is 1-[2-(2,4-dichlorophenyl)pentyl--1H-1,2,4-triazole ("penconazole").

85. (New) A method according to claim 1, wherein said microbicide is cis-4-[3-(4-tert-butylphenyl)--2-methylpropyl]--2,6-dimethylmorpholine ("fenpropimorph").

86. (New) A method according to claim 1, wherein said microbicide is 1-[3-(4-tert-butylphenyl)--2-methylpropyl]-piperidine ("fenpropidin").

87. (New) A method according to claim 1, wherein said microbicide is 4-cyclopropyl-6-methyl-N-phenyl-2-pyrimidinamine ("cyprodinil").

88. (New) A method according to claim 1, wherein said microbicide is (RS)-N-(2,6-dimethylphenyl--N-(methoxyacetyl)-alanine methyl ester ("metalaxyl", "ridomil").

89. (New) A method according to claim 1, wherein said microbicide is (R)-N-(2,6-dimethylphenyl--N-(methoxyacetyl)-alanine methyl ester ("R-metalaxyl").

90. (New) A method according to claim 1, wherein said microbicide is 1,2,5,6-tetrahydro--4H-pyrrolo[3,2,1-ij]quinolin-4-one ("pyroquilon").

91. (New) A method according to claim 1, wherein said microbicide is ethyl hydrogen phosphonate ("fosetyl").

92. (New) A method according to claim 1, wherein said microbicide is copper hydroxide.

93. (New) A method according to claim 1, wherein said plant is selected from the group consisting of: barley, cucumber, tobacco, rice, chili, wheat, banana, and tomato.

REMARKS

Claims 1, 8, 10, 42, 58, and 62 have been amended, claims 2-7, 9, 11-41, 43-57, 60-61, and 63-67 have been canceled without prejudice or disclaimer, and new claims 68-93 have been added. Thus, the pending claims are 1, 8, 10, 42, 58-59, 62, and 68-93. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached pages are captioned "**Version With Markings To Show Changes Made.**"

No new matter has been added. Therefore, Applicants respectfully request that the instant amendment be entered and receive favorable consideration. The Examiner is invited to telephone the undersigned attorney if any questions or concerns arise during examination.

Respectfully submitted,

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Version With Markings To Show Changes Made

Claims 1, 8, 10, 42, 58, and 62 have been amended as follows:

1. (Amended) A method for protecting a plant from pathogen attack, comprising the steps of:

(a) providing [an immunomodulated] a plant transformed with a chimeric gene comprising a promoter active in plants operatively linked to a nucleotide sequence encoding a protein involved in the signal transduction cascade leading to systemic acquired resistance in plants, wherein the complement of said nucleotide sequence hybridizes under the following conditions to the coding sequence set forth in SEQ ID NO:6: hybridization in 1% BSA; 520mM $NaPO_4$, pH7.2; 7% lauryl sulfate, sodium salt; 1mM EDTA; 250 mM sodium chloride at 55°C for 18-24h, and wash in 6XSSC for 15 min. (X3) 3XSSC for 15 min. (X1) at 55°C, wherein said plant exhibits [having] a first level of disease resistance; and

(b) applying to [said immunomodulated] the plant provided in step (a) [at least one] a microbicide that confers a second level of disease resistance;

(c) whereby application of said microbicide to said [immunomodulated] plant confers a synergistically enhanced third level of disease resistance that is greater than the sum of the first and second levels of disease resistance.

8. (Amended) A method according to claim 1 [7], wherein said [NIM1] protein comprises the amino acid sequence set forth in SEQ ID NO:2.

10. (Amended) A method according to claim 1 [7], wherein said [DNA molecule] nucleotide sequence comprises the coding sequence set forth in [SEQ ID NO:1.] SEQ ID NO:6.

42. (Amended) A method according to claim 1 [6], wherein said microbicide is a fungicide selected from the following group:

4-[3-(4-chlorophenyl)-3-(3,4-dimethoxyphenyl)acryloyl]morpholine ("dimethomorph");

5-methyl-1,2,4-triazolo[3,4-b][1,3]benzothiazole ("tricyclazole");

3-allyloxy-1,2-benzothiazole-1,1-dioxide ("probonazole");

μ-[2-(4-chlorophenyl)ethyl]--μ-(1,1-dimethylethyl)-1H-1,2,4-triazole-1-ethanol,("tebuconazol");

1-[[3-(2-chlorophenyl)-2--(4-fluorophenyl)oxiran-2-yl]methyl]-1H-1,2,4-triazole, ("epoxyconazol");

μ-(4-chlorophenyl)--μ-(1-cyclopropylethyl)--1H-1,2,4-triazole--1-ethanol, ("cyproconazol");

5-(4-chlorobenzyl)--2,2-dimethyl-1--(1H-1,2,4-triazol-1--ylmethyl)-cyclopentanol, ("metconazol");

2-(2,4-dichlorophenyl)--3-(1H-1,2,4-triazol-1-yl)-propyl--1,1,2,2-tetrafluoroethyl-ether, ("tetraconazol");

methyl-(E)-2-{2-[6-(2-cyanophenoxy)pyrimidin--4-yloxy]phenyl}--3-methoxyacrylate, ("ICI A 5504", "azoxystrobin");

methyl-(E)--2-methoximino--2-[μ-(o-tolyloxy)--o-tolyl]acetate, ("BAS 490 F", "cresoxime methyl");

2-(2-phenoxyphenyl)-(E)-2-methoximino--N-methylacetamide);

[2-(2,5-dimethylphenoxymethyl)-phenyl]-(E)--2-methoximino-N-methylacetamide);

(1R,3S/1S,3R)-2,2-dichloro--N-[(R)-1-(4-chlorophenyl)ethyl]--1-ethyl-3-methylcyclopropanecarboxamide, ("KTU 3616");

manganese ethylenebis(dithiocarbamate)polymer-zinc complex, ("mancozeb");

1-[2-(2,4-dichlorophenyl)-4-propyl-1,3-dioxolan--2-ylmethyl]--1H-1,2,4--triazole, ("propiconazole");

1-{2-[2-chloro-4-(4-chlorophenoxy)phenyl]-4-methyl--1,3-dioxolan--2-ylmethy l)--1H-1,2,4--triazole, ("difenoconazole");

1-[2-(2,4-dichlorophenyl)pentyl--1H-1,2,4-triazole, ("penconazole");

cis-4-[3-(4-tert-butylphenyl)--2-methylpropyl]--2,6-dimethylmorpholine, ("fenpropimorph");

1-[3-(4-tert-butylphenyl)--2-methylpropyl]-piperidine, ("fenpropidin");

4-cyclopropyl-6-methyl-N-phenyl-2-pyrimidinamine ("cyprodinil");

(RS)-N-(2,6-dimethylphenyl--N-(methoxyacetyl)-alanine methyl ester ("metalaxyl", "ridomil");

(R)-N-(2,6-dimethylphenyl--N-(methoxyacetyl)-alanine methyl ester ("R-metalaxyl");

1,2,5,6-tetrahydro--4H-pyrrolo[3,2,1-ij]quinolin-4-one ("pyroquilon"); and

ethyl hydrogen phosphonate ("fosetyl").

58. (Amended) A method according to claim 1 [6], wherein said microbicide is either a benzothiadiazole compound, an isonicotinic acid compound, or a salicylic acid compound.

62. (Amended) A method according to claim 59 [61], wherein said benzothiadiazole compound is benzo(1,2,3)thiadiazole-7-carbothioic acid *S*-methyl ester.

Claims 2-7, 9, 11-41, 43-57, 60-61, and 63-67 have been canceled without prejudice or disclaimer.

New claims 68-93 have been added